



Resource Photography

Mark R. Cox – Program Manager

- Resource Photography Definitions
- FY2005 Accomplishments & Statistics
- Flight Planning of Projects
- Web-Based Status Reporting
- Status of Digital Indexing
- Specific Review of Current Resource Projects

Resource Photography Definitions

- Resource photography may be defined as blocked, conventional imagery generally flown at a scale larger than 1:40,000.
- Often placed in the "Other" category, it can be classified as non-NAIP, non-NRI, & may have varying requirements; such as scale, sun angle, & camera focal length.
- Common scales for resource photography are 1:12,000, 1:15,840, & 1:24,000.
- The minimum sun angle for resource photography can range from 30-50 degrees.
- Common camera focal lengths used in resource photography are 6-inch, 8 ¼-inch, & 12-inch.
- While most flights in resource photography are flown north-south, some may be flown east-west, and/or diagonally.

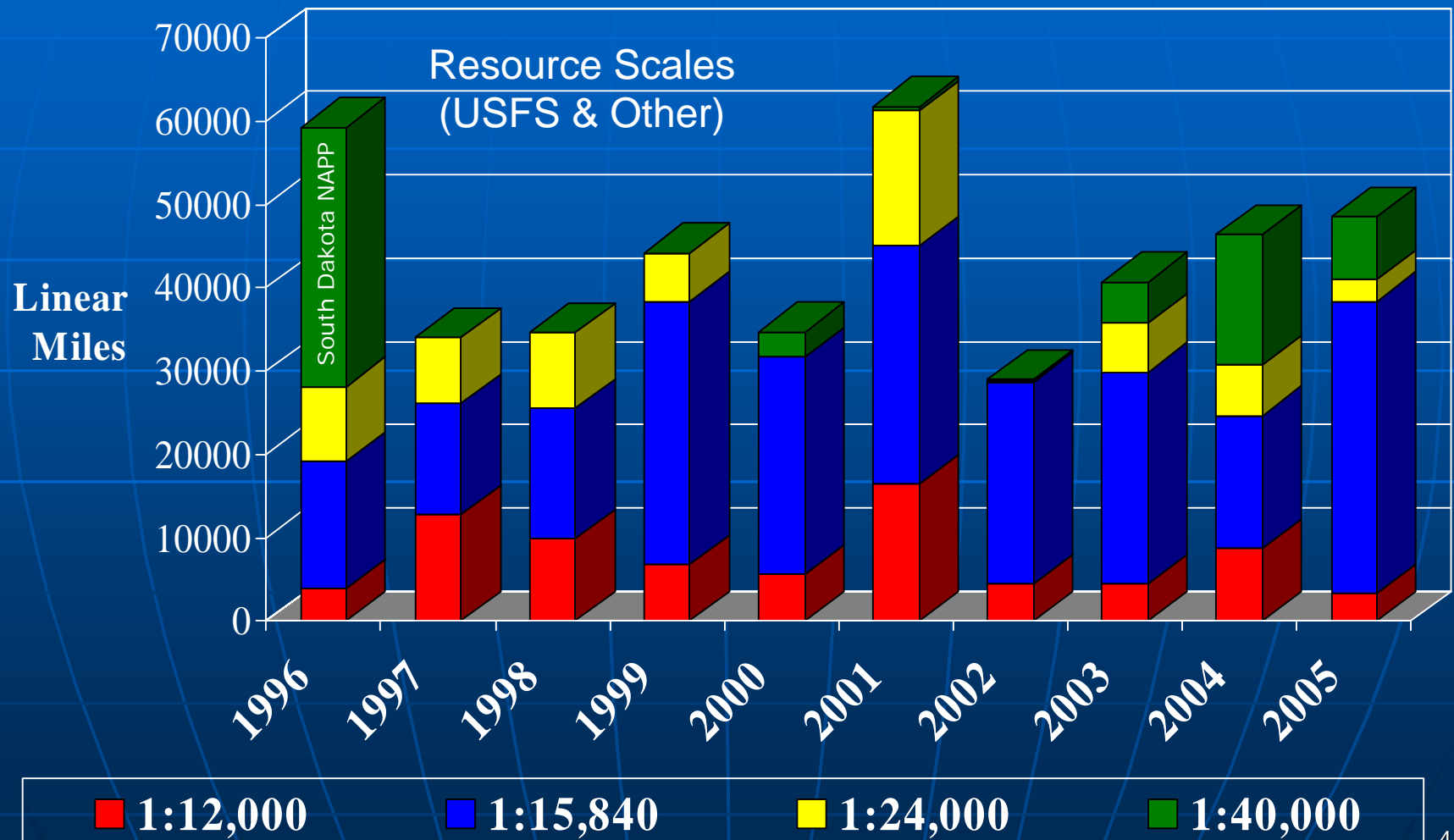
USDA Resource Aerial Photography Contracts



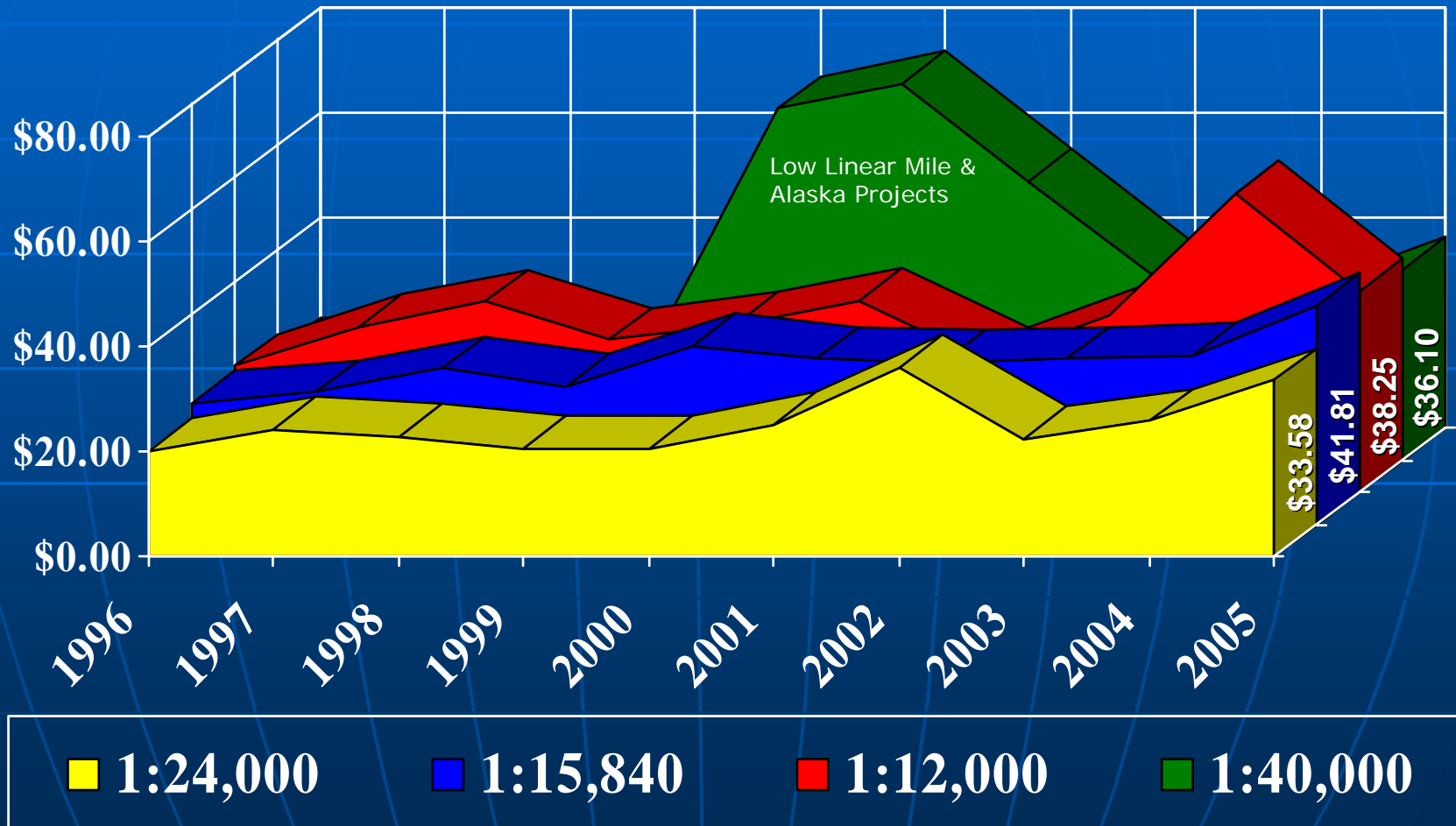
For FY2005 APFO:

Awarded 16 Resource Aerial Photography Contracts for a total value of \$1,953,443.64 covering 77,192 Square Miles (48,550 LM).

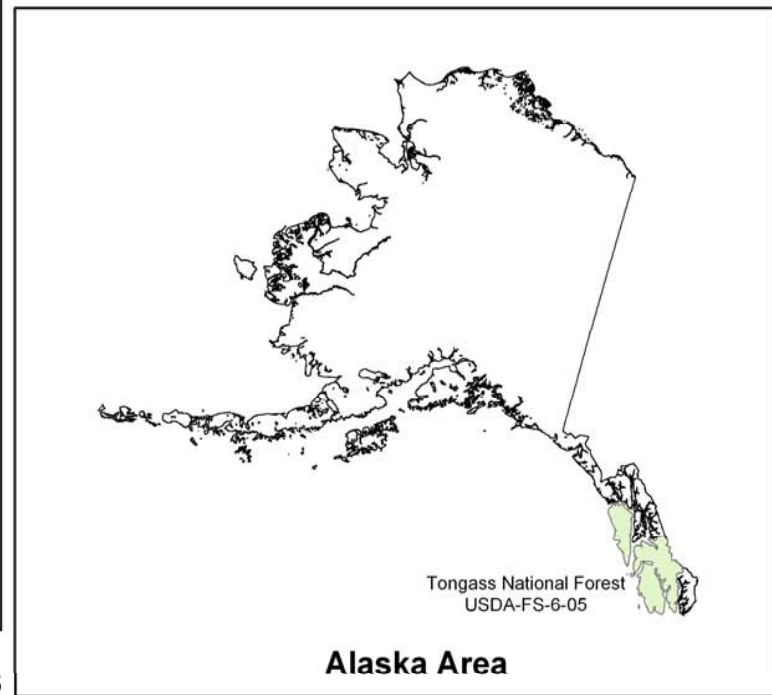
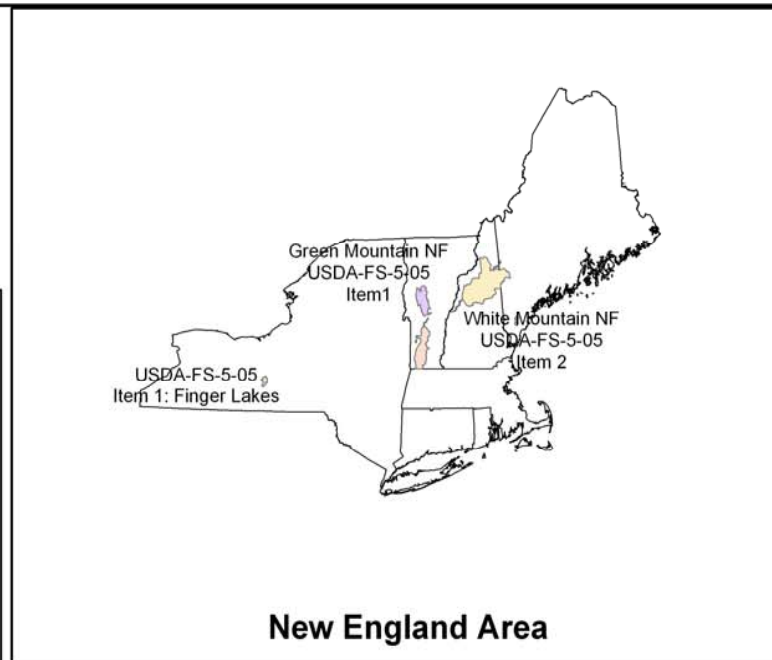
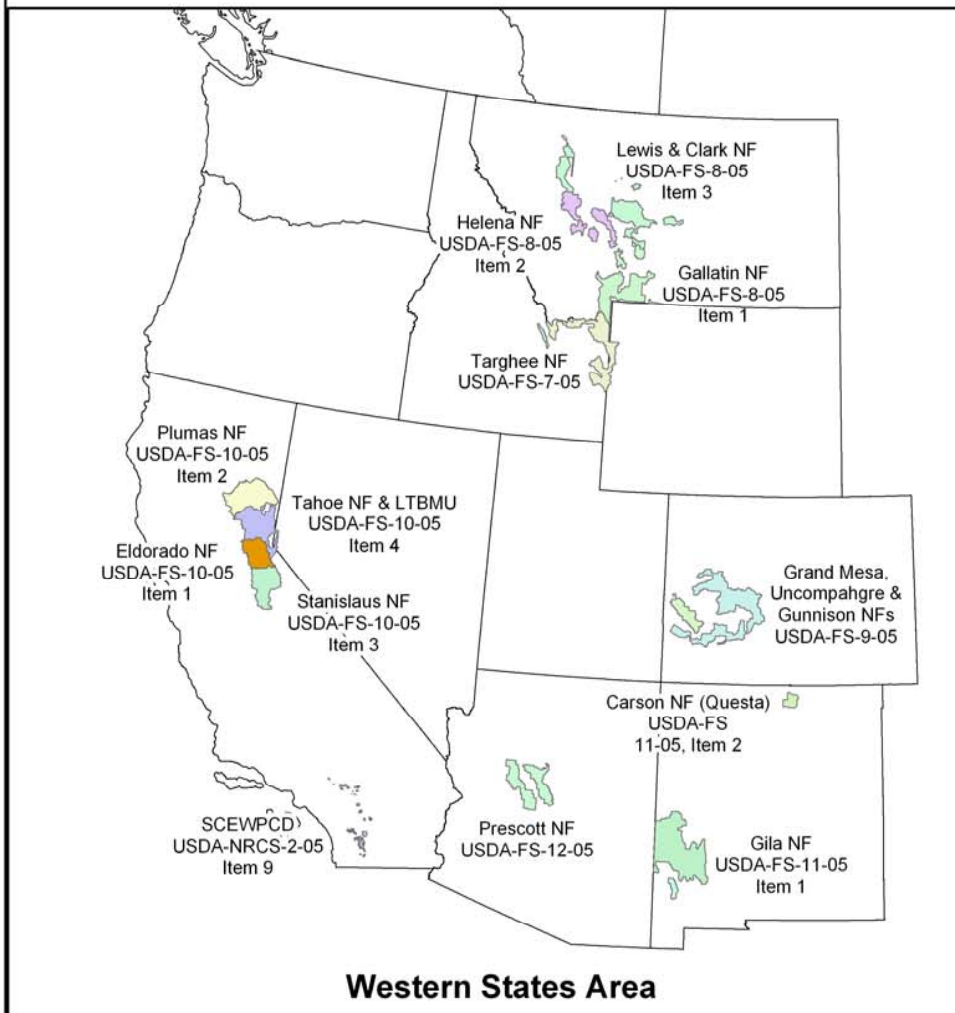
Linear Miles Contracted over 10 Years According to Photographic Scale



Linear Mile Pricing for Resource Photography over 10 Years

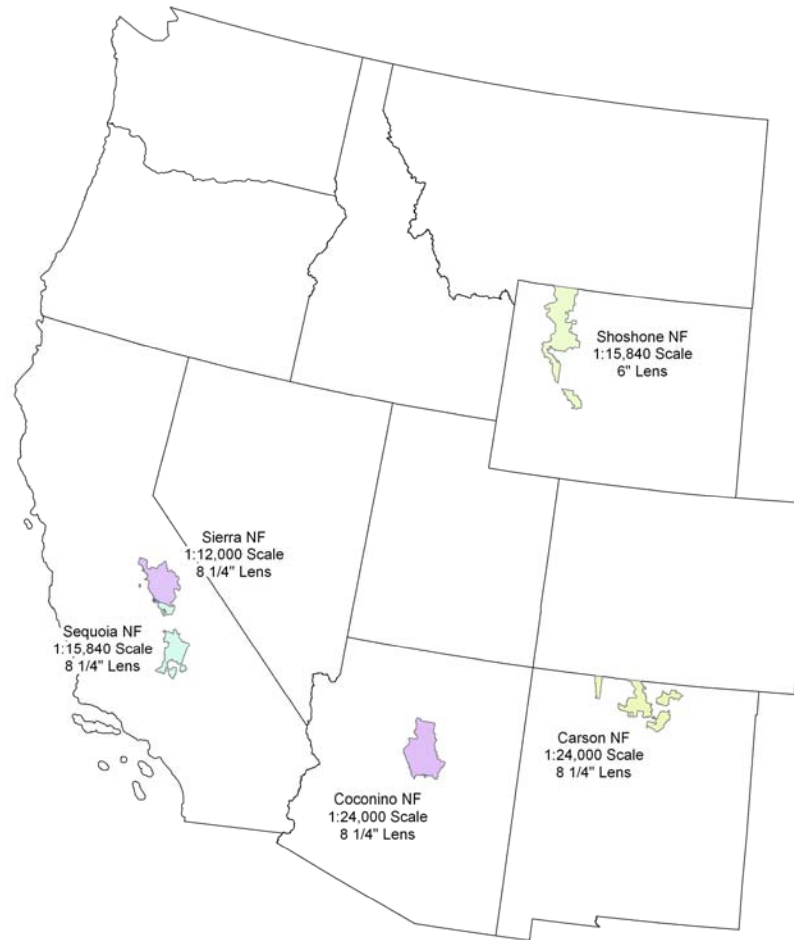


2005 RESOURCE AERIAL PHOTOGRAPHY PROJECTS

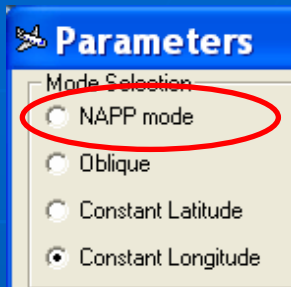


Proposed 2006 Projects

PROPOSED 2006 RESOURCE AERIAL PHOTOGRAPHY PROJECTS

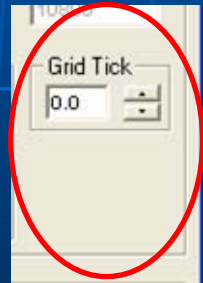
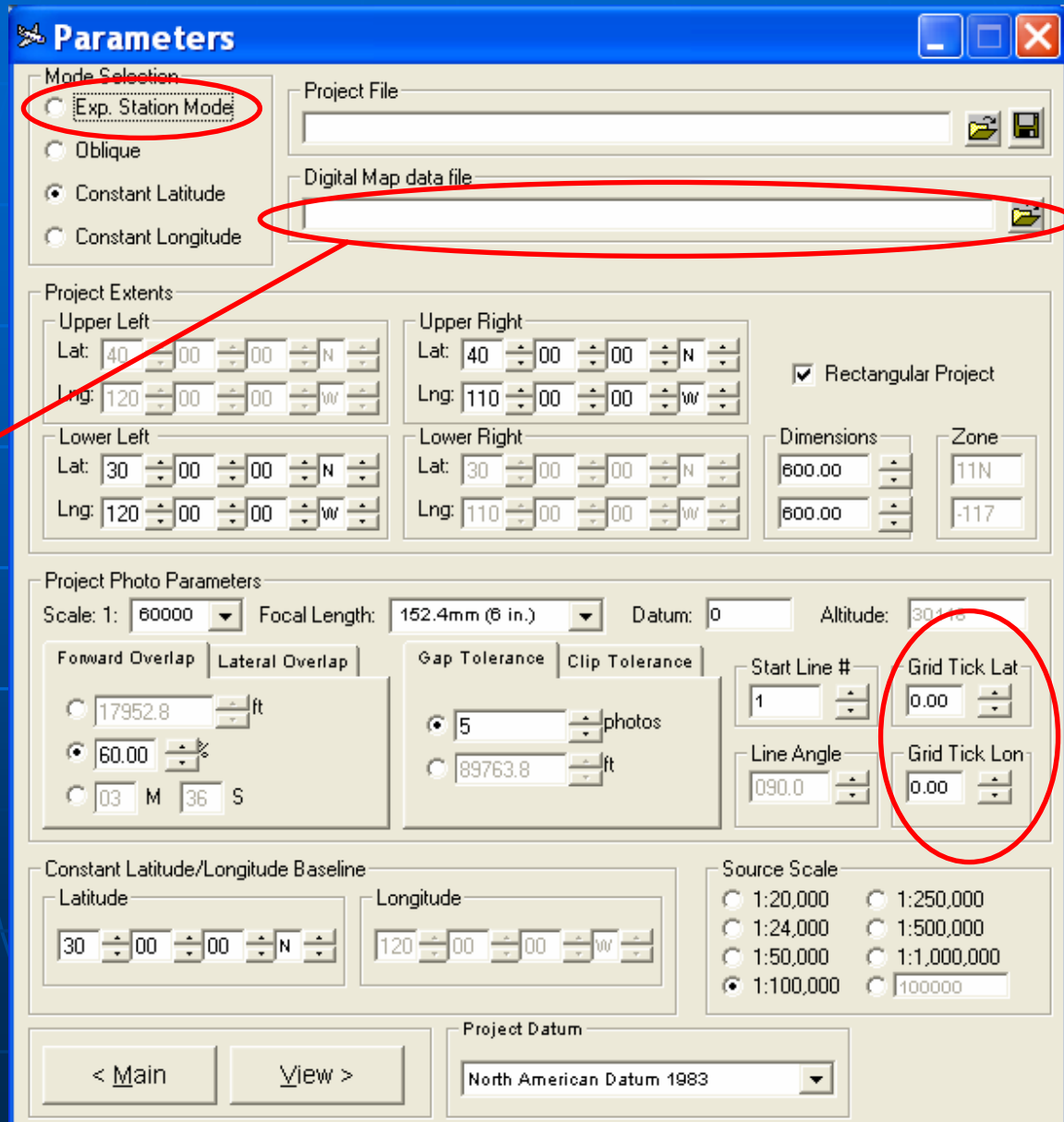


Flight Planning of Projects (Software)



Old

Now multiple
DRG files can
be added.



Old

Display Page (Zoom & Measure)

Layers: C:\Data\100k_DRGEs\Zone_12\Lat_44-47\44109e1.tif;f44111a1.tif;f44111e1.tif;f45109a1.tif;f45109e1.tif;f45110a1...

File Edit View

Original Param Shift Rotate Extend Break New Line Del Line New Load Save Edit FLN Clear Main Measure

Area of Photo Field: 2,759.65 Mi
Single Photo Coverage: 1.32 Mi
Minimum: 1

Number of Lines: 90
Total Line Length: 2,103.00 Mi
Total Photos: 2,659

North 4995681.13
Lat 45-06-46.864N
View Scale 1:705196

East 547287.62
Lon 110-23-55.812W
WGS 1984

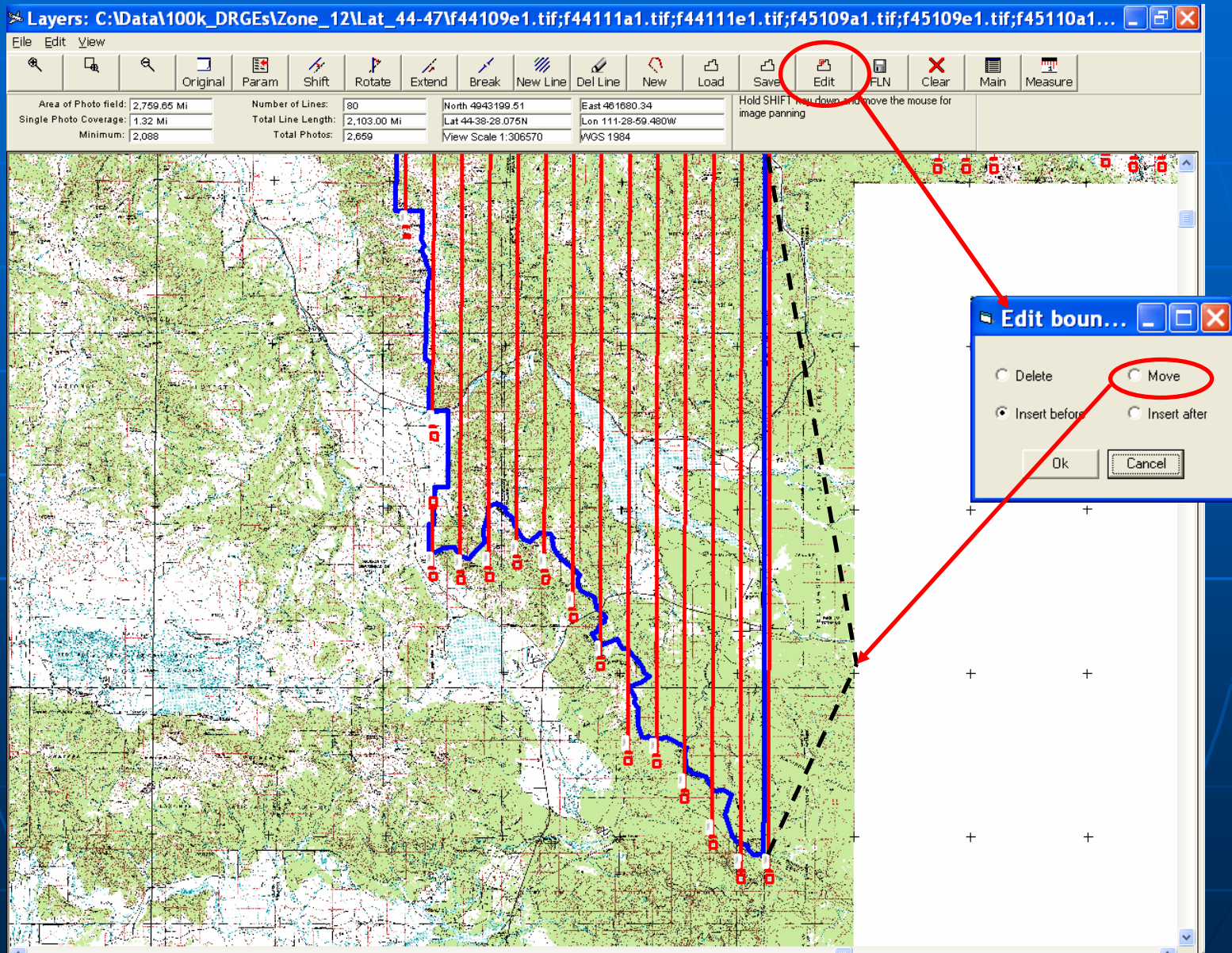
Hold SHIFT key down and move the mouse for image panning

Flight Line Design

Distance: 298286.67ft.

OK

Display Page (Edit Boundary)



Display Page (Edit Result)

The screenshot displays a GIS application window with a map showing a blue boundary and red flight lines. The 'File' menu is open, and the 'Exit' option is circled. The toolbar contains buttons for 'Save' and 'FLN', which are also circled. A text box on the right explains the workflow: 'Save boundary & flight line files once desired results are achieved.' An arrow points to the blue boundary line with the text 'Result of boundary modification.'

Layers: C:\Data\100k_DRG\Zone_12\Lat_44-47\44109e1.tif;44111a1.tif;44111e1.tif;45109a1.tif;45109e1.tif;45110a1...

File Edit View

Save Project Ctrl+S
Save Project As
Save Flight Line file Ctrl+L
Save PPC file Ctrl+P
Connect layer to Map Ctrl+O
Import FIN file Ctrl+F
Import NAPP file (.lin) Ctrl+N
Import DXF to Overlay Ctrl+I
Clear Map Ctrl+C
Clear Overlay Drawing Ctrl+D
Map Properties Ctrl+M
Print Map

Exit

Param Shift Rotate Extend Break New Line Del Line New Load Save Edit FLN Clear Main Measure

Number of Lines: 77
Total Line Length: 1,987.95 Mi
Total Photos: 2,515

North 4986069.68
Lat 45-01-30.488N
View Scale 1:319220

East 435399.66
Lon 111-49-12.003W
WGS 1984

Save boundary & flight line files once desired results are achieved.

Result of boundary modification.

Flight Altitude Processing

Click right mouse button on green check to call up profile graph.

optWinApp

CFG File: C:\Data\FLIGHTDESIGN\CFG\08-05-1-gallatin.cfg

Processing Mode: Flight Line Mode

Flight Line File: C:\Data\FLIGHTDESIGN\FLN\08-05-1-gallatin.fln

Flight Lines

Line	Lat 1	Lon 1	Lat 2	Lon 2	Line Breaks	Focal...	Scale
✓ 15	44-42-6.07N	111-24-21.04W	45-18-56.81N	111-24-21.04W	1	153	15840
✓ 16	45-20-25.64N	111-24-21.04W	45-27-57.65N	111-24-21.04W	0	153	15840
✓ 17	44-43-11.07N	111-22-28.61W	45-27-56.72N	111-22-28.61W	1	153	15840
Profile	44-42-55.95N	111-20-36.18W	45-28-47.74N	111-20-36.18W	2	153	15840
✓ 18	44-41-23.24N	111-18-43.75W	45-29-14.78N	111-18-43.75W	2	153	15840
✓ 19	44-38-8.31N	111-16-51.32W	45-29-40.39N	111-16-51.32W	3	153	15840
✓ 20	44-35-21.16N	111-14-58.89W	45-31-49.97N	111-14-58.89W	3	153	15840
✓ 21	44-33-47.21N	111-13-6.46W	45-31-50.43N	111-13-6.46W	4	153	15840
✓ 22	44-32-11.89N	111-11-14.03W	45-33-8.02N	111-11-14.03W	2	153	15840

Datum Options

Input Datum: WGS 1984

Output Datum: WGS 1984

Output Files

C:\DATA\FLIGHTDESIGN\PRJ\BIB\08-05-1-gallatin.BIB
C:\DATA\FLIGHTDESIGN\PRJ\LOG\08-05-1-gallatin.LOG
C:\DATA\FLIGHTDESIGN\PRJ\OPT\08-05-1-gallatin.OPT
C:\DATA\FLIGHTDESIGN\PRJ\PPC\08-05-1-gallatin.PPC

Processing Status

Flight-line: 74
Flight-line: 75
Flight-line: 76
Flight-line: 77
Flight-line: 78
Flight-line: 79
Program Done

Control Parameters

60 Forward Overlap %
30 Lateral Overlap %
500 Corridor Width (ft)
15 Scale Tolerance up % 39.13
15 Scale Tolerance down % 17.64

Line Breaks

☒ Enable Line Breaks
10 Minimum Length (miles)
1 Break overlap (photos)

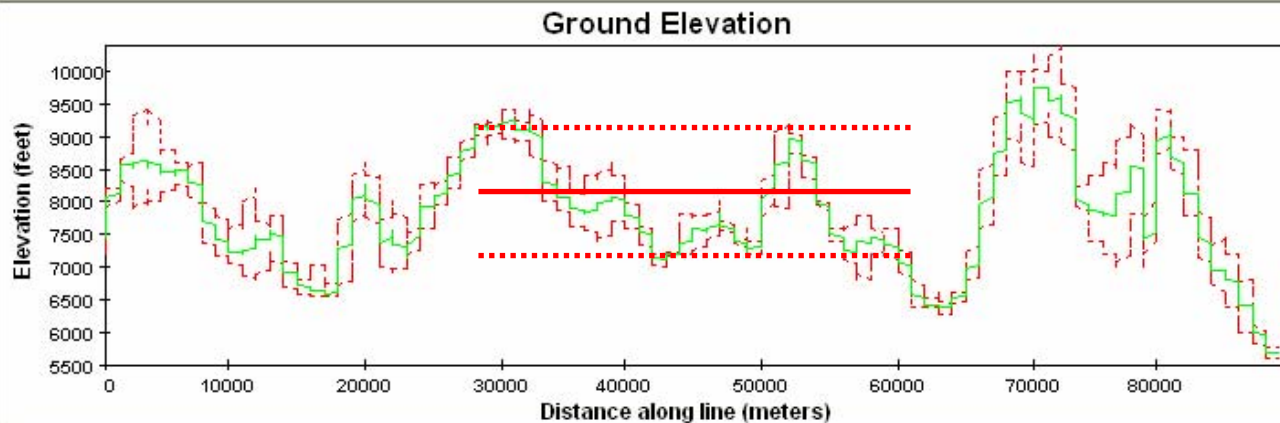
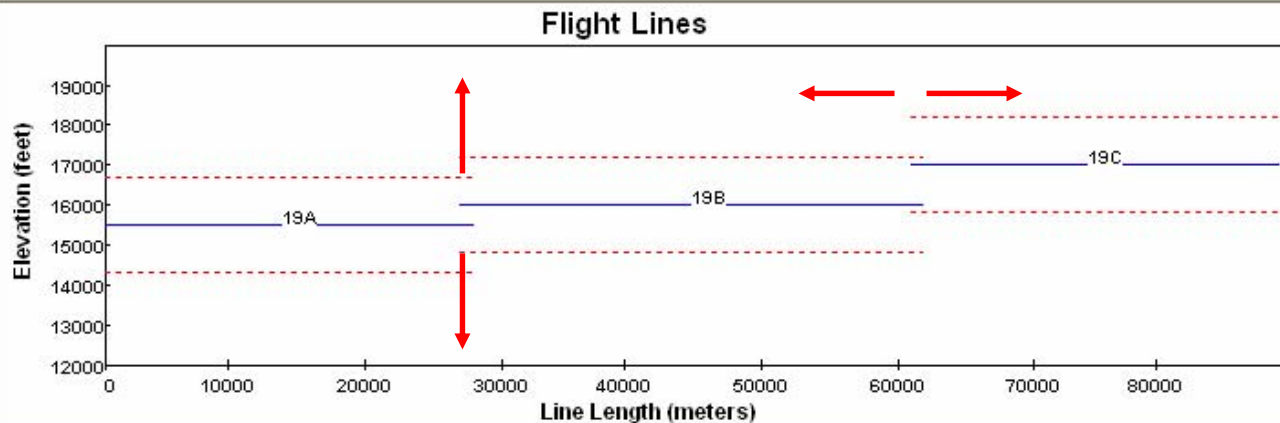
Elevation Filtering

☐ Enable Elevation Filtering
0 Minimum elevation cutoff (ft)
0 Maximum elevation cutoff (ft)

Start Stop

Flight Line Profile Graph

Flight Line Plot



Mouse Location

Elevation

Latitude

UTM Easting

Line Distance

Longitude

UTM Northing

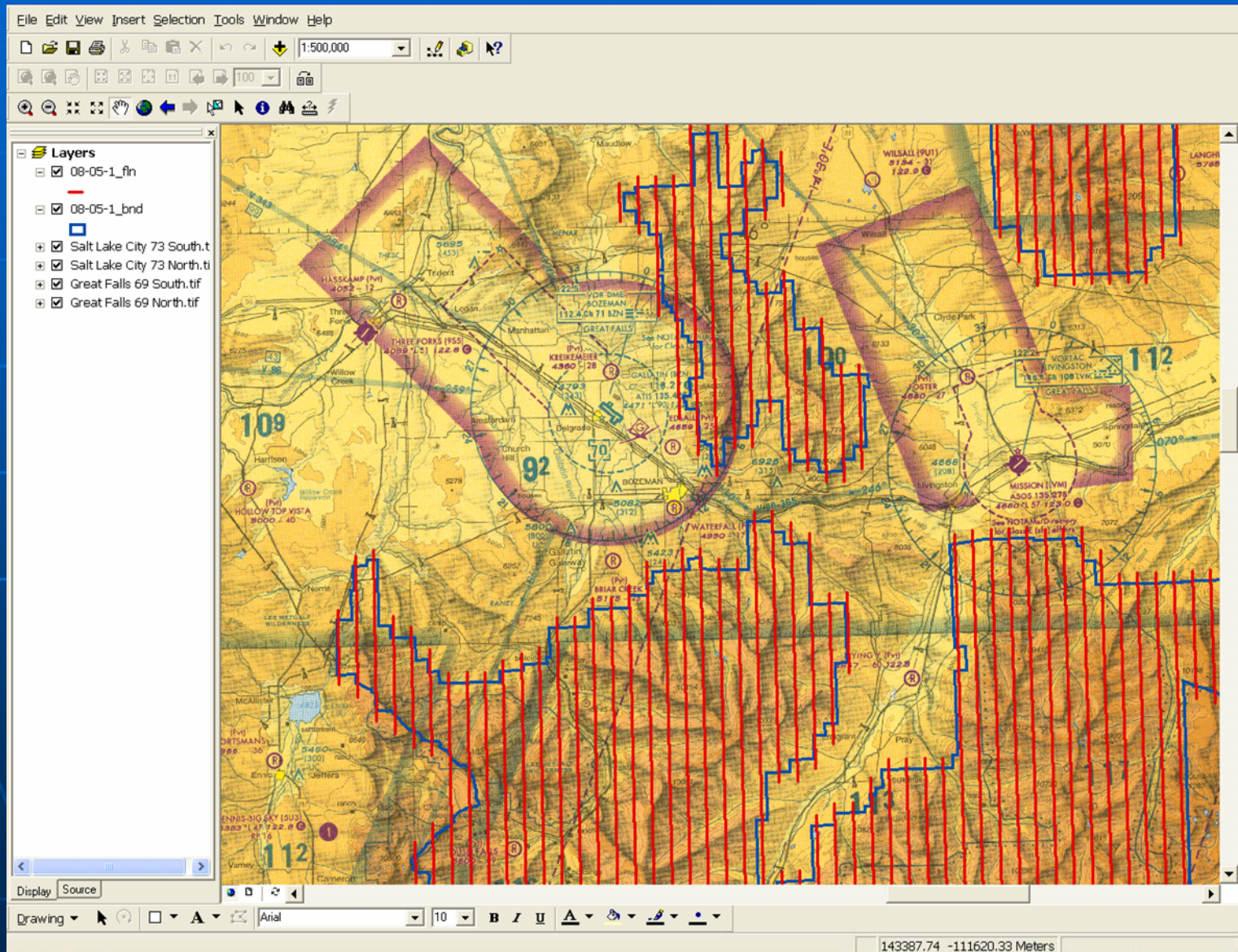
OK

Cancel

Some Concluding Notes on Flight Planning

- Flight planning is an art – no two people will flight plan a project exactly the same way, yet the basics should be the same.
- Previous flight plans are normally used unless there are:
 - Significant boundary changes with the new flight plan.
 - Major errors in the old flight plan.
- Once a flight plan is processed in AccuNav, shapefiles are generated from the AccuNav files to be downloaded into ArcMap.
- Eventually, AccuNav will be incorporated as a subprogram to ArcMap, which will eliminate the need to convert from one file structure to another.
- While there are still challenges ahead, flight planning has come a long way from what it was years ago.

Restricted Airspace Check



Web-Based Status Reporting (1st Year)

- Process for Accessing (Review)
- Interactive Resource Projects Map
- Individual Project Maps Showing Coverage.
- Feedback on Process (after first year).



Aerial Photography Field Office

Farm Service Agency



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The Aerial Photography Field Office, Farm Service Agency is the primary source of aerial imagery for the United States Department of Agriculture. Over 10,000,000 images are held here. The imagery dates begin with 1955 to the present.



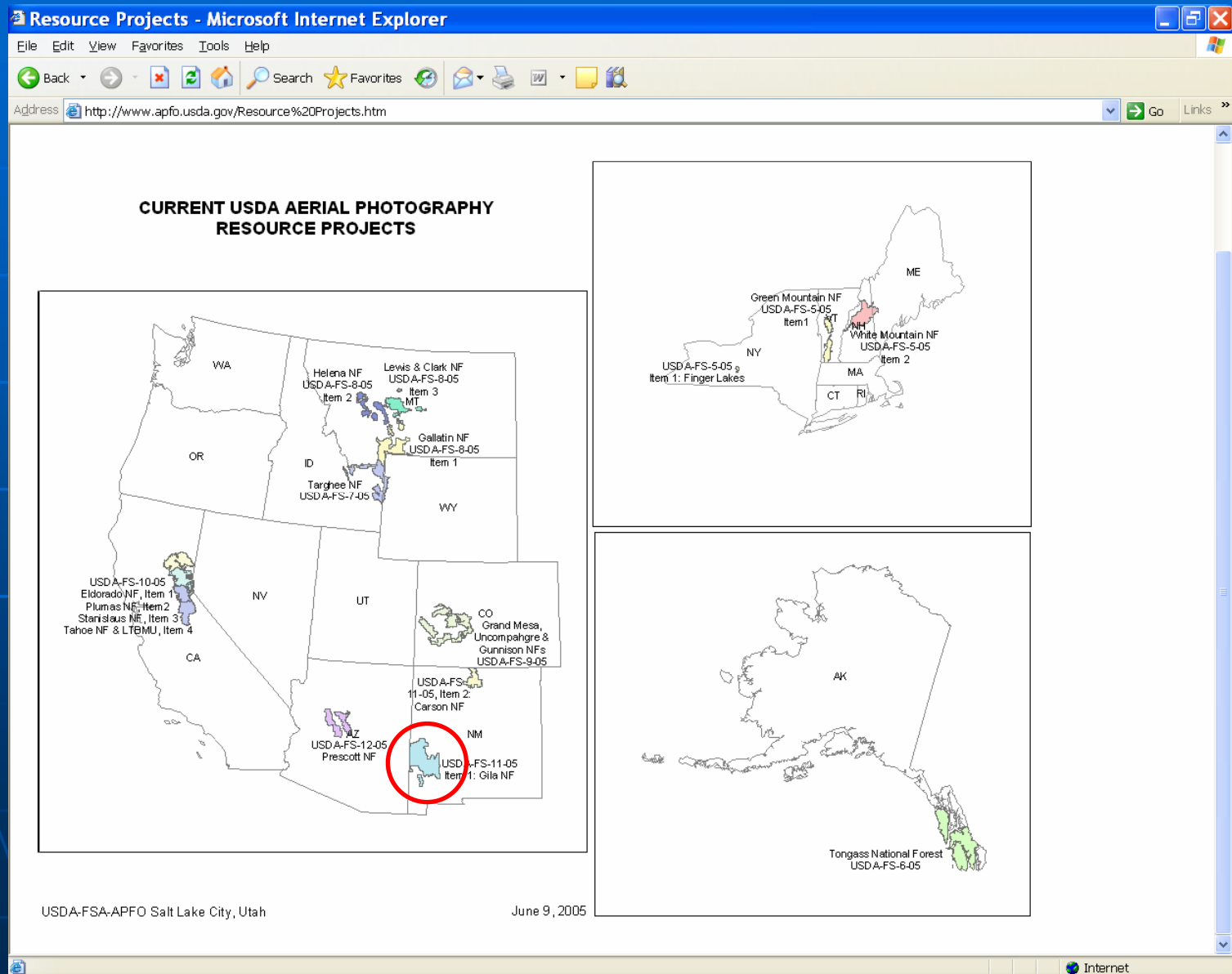
Aerial Photography Field Office

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NEW](#)[Contract Status \(Select Program\)](#)[Other Contracting Data Links](#)[Contract Status \(Select Program\)](#)[NRI PSU Status \(GIF\)](#)[Resource Status \(Interactive\)](#)[Business
Opportunities](#)[Contract Support](#)[FedBizOpps](#)[ARNET \(FAR\)](#)[USDA Planning
Meeting](#)

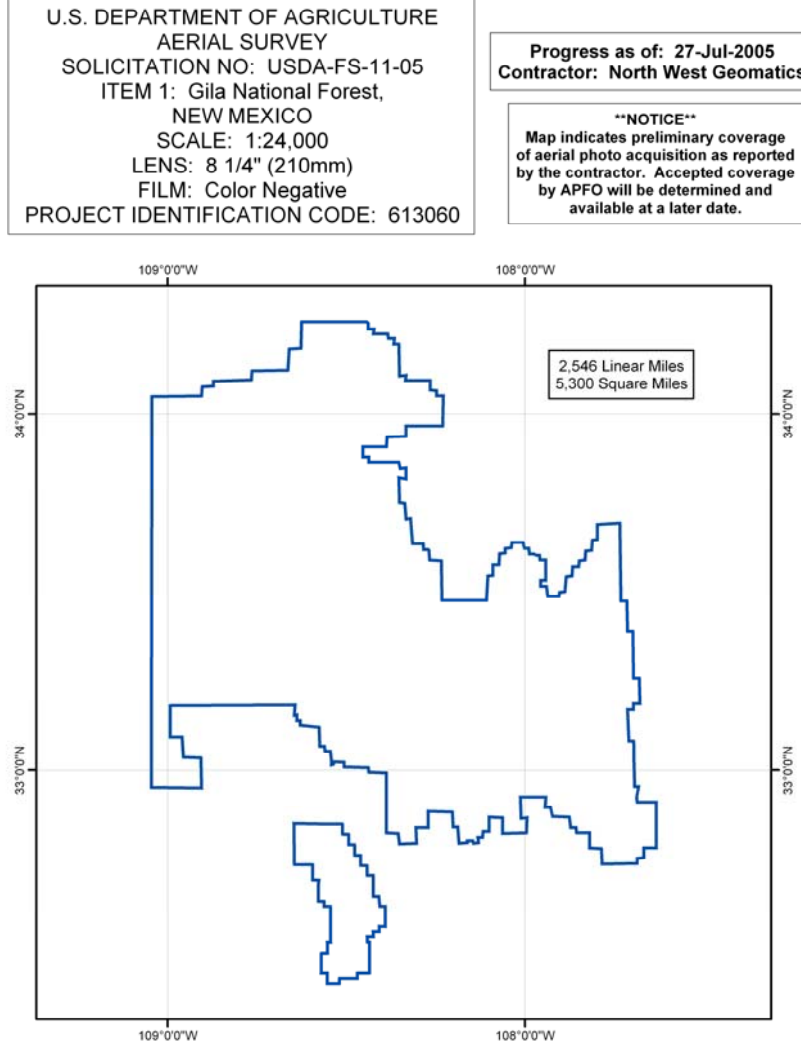
The Aerial Photography Field Office provides contracting services for the procurement of aerial photographic film and digital imagery for the U.S. Department of Agriculture and other Federal Agencies. A full range of contracting services are provided including coordinating requests for new imagery, facilitating cooperative agreements, flight planning, technical assistance, and administrative & quality assurance services of subsequent contracts.

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GOV](#)[OTHER
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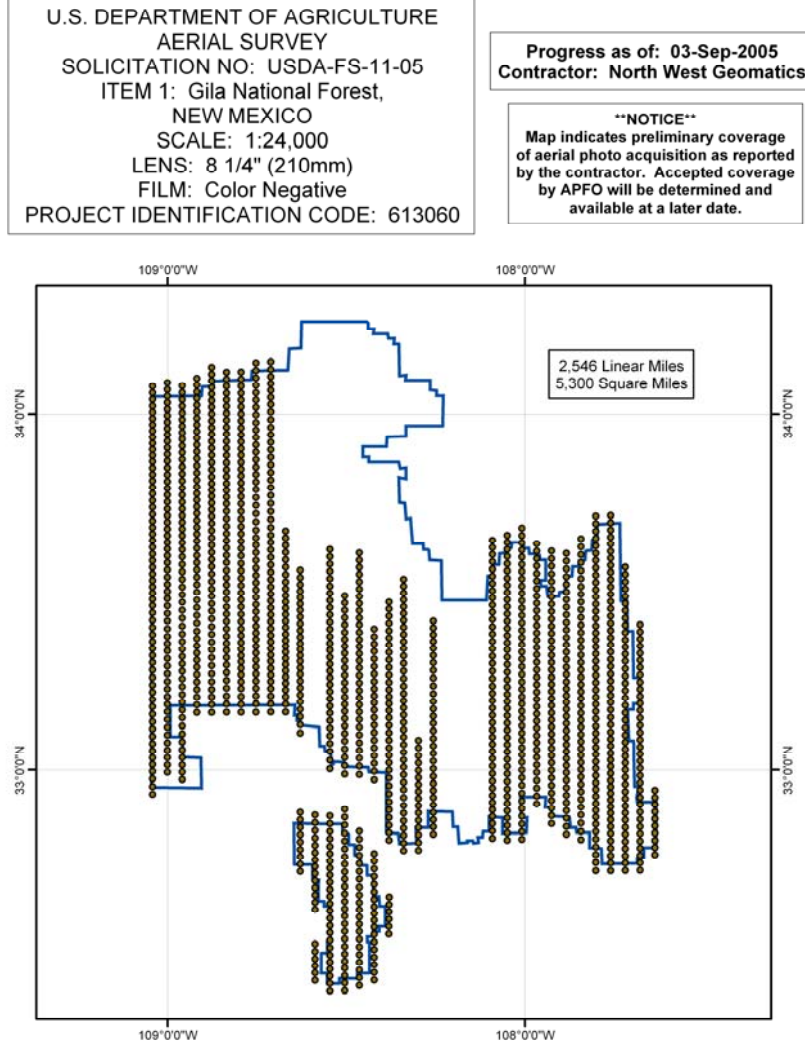
2005 Interactive Resource Projects Map



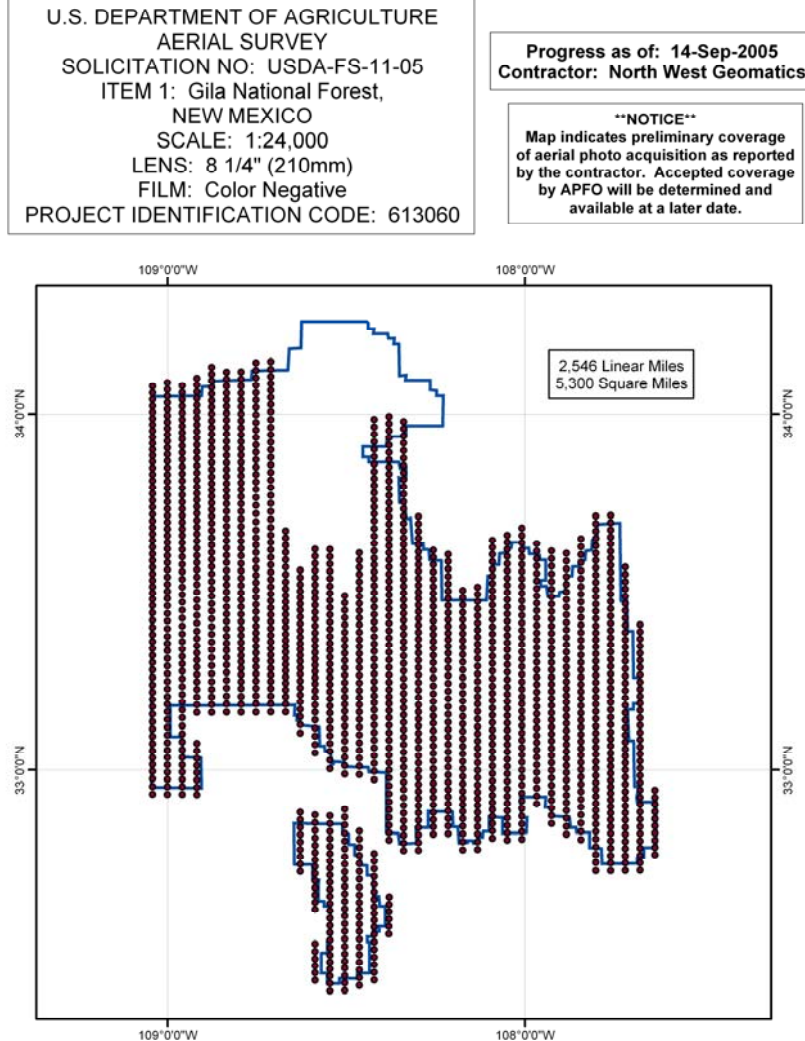
Individual Project Progress – 0%



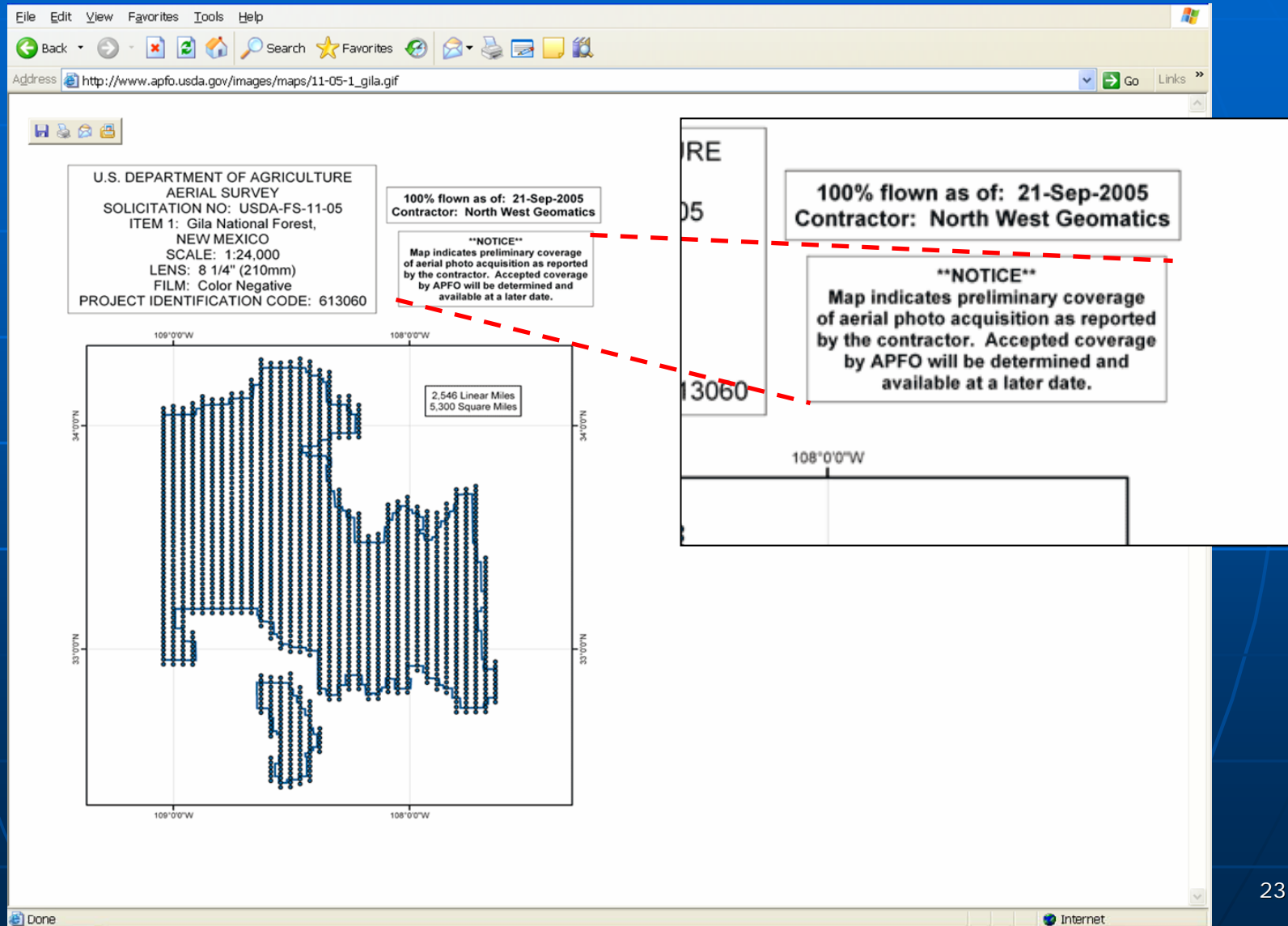
Individual Project Progress – 60%



Individual Project Progress – 85%



Individual Project Progress – 100%



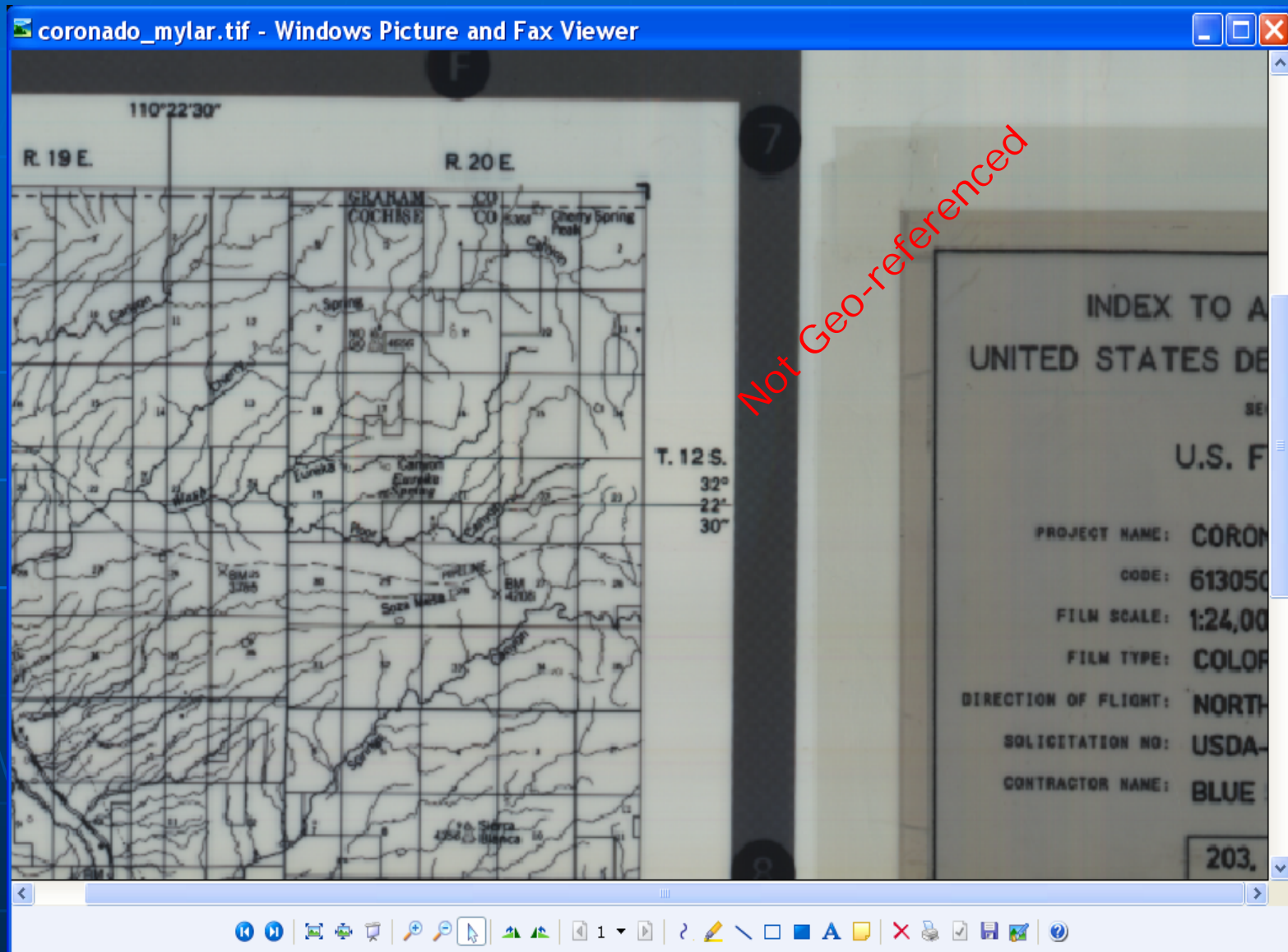
Feedback

- Well received from those using it.
- Would like to see previous year contracts represented.
- Is information on individual project maps sufficient?
- How great is the need to download information (such as boundary & point shapefiles) from these maps?

Status of Digital Indexing

- Overall, our digital indexes are getting better.
- It's been a learning curve on "both sides of the coin."
- Challenges have included:
 - Transitioning from Mylar product to digital product.
 - Submission of geo-referenced base maps.
 - No standardized projection – NAD-83, WGS-84, NAD-27, State Plane, etc., to no projection at all.
 - Getting photo center files to overlay correctly on index map.
 - Communicating corrections needing to be made to contractor.
 - Explaining in the contract exactly what is wanted.
 - Consistency.

Scanned Mylar Index



Sample Digital Index (Plumas NF)

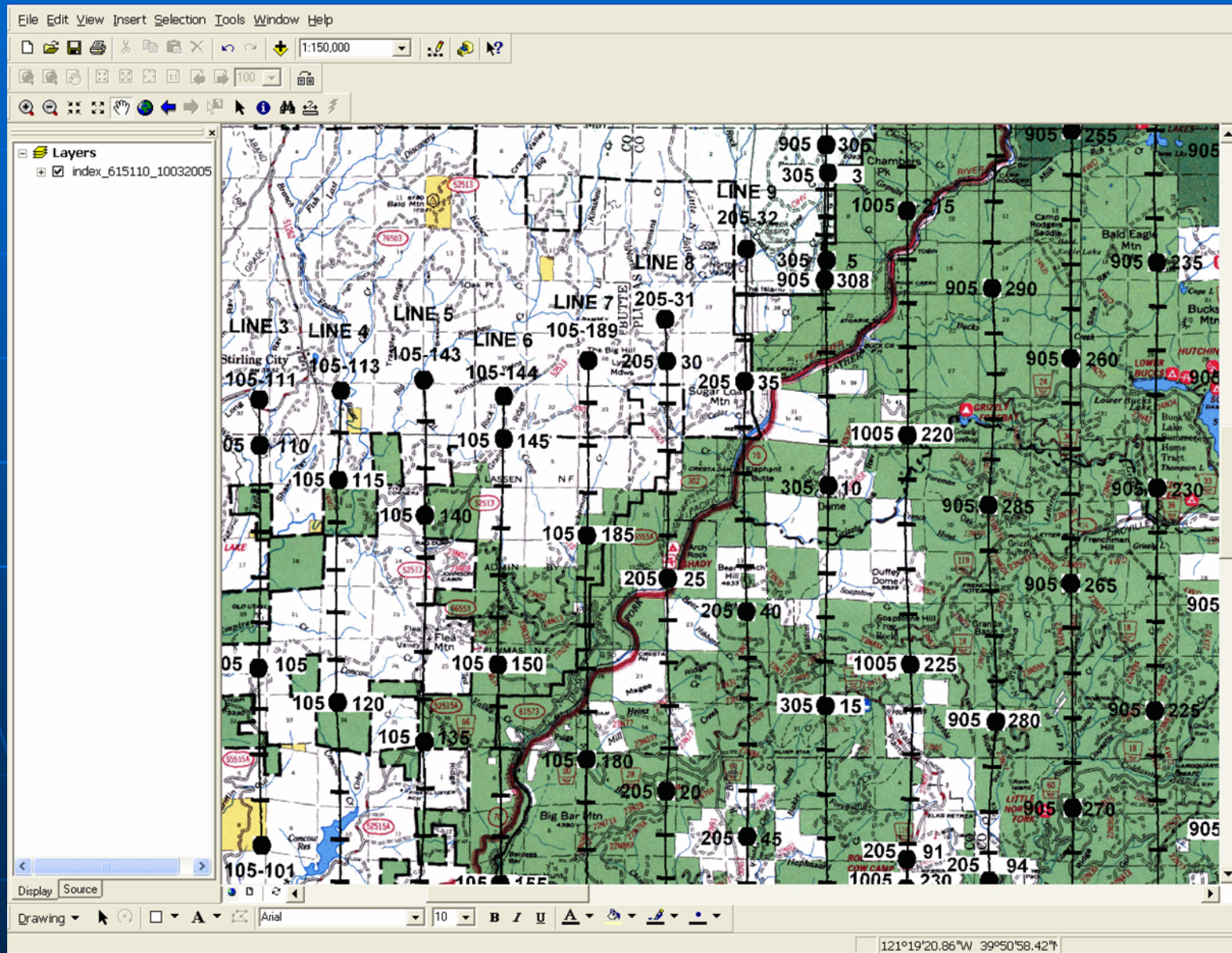
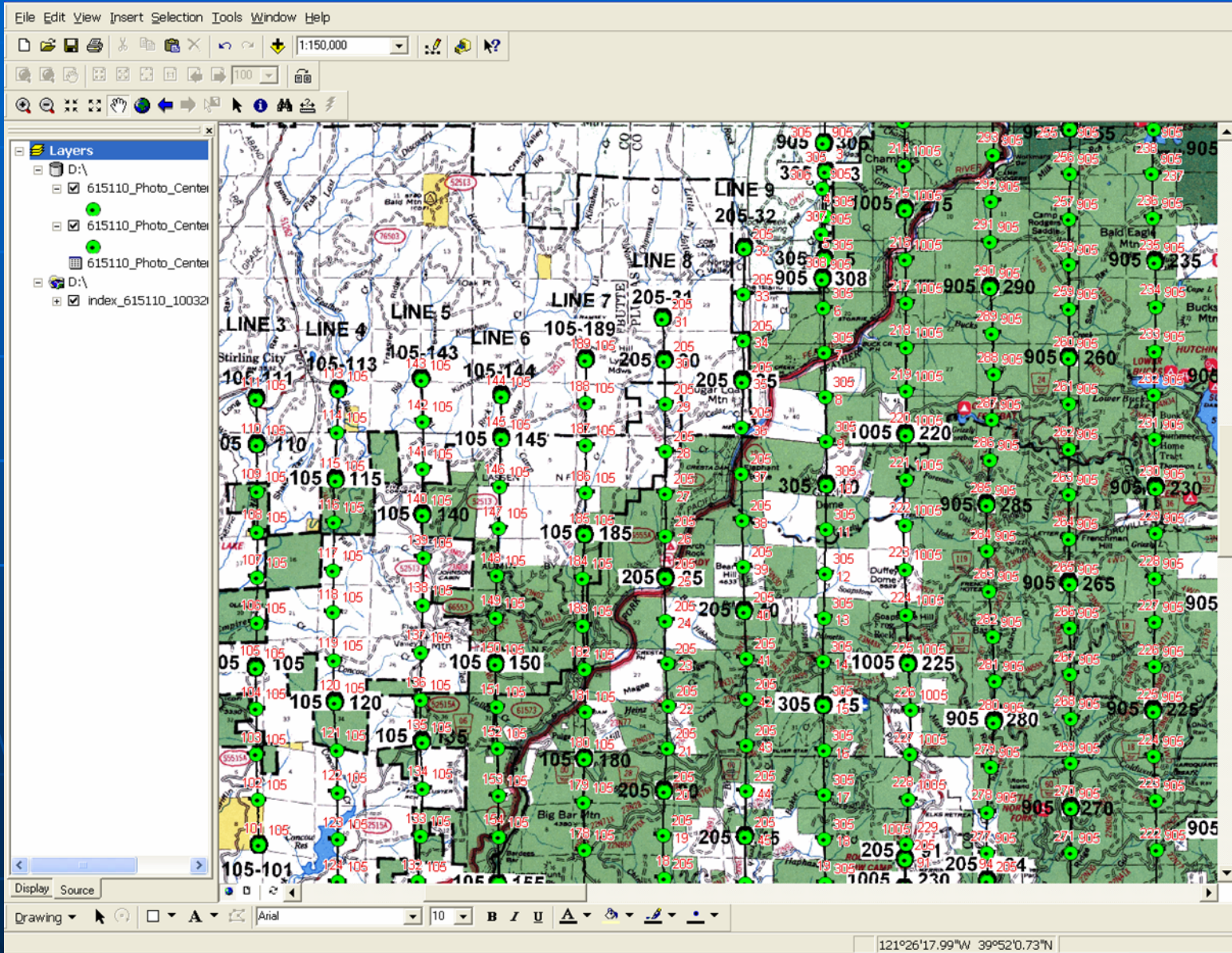
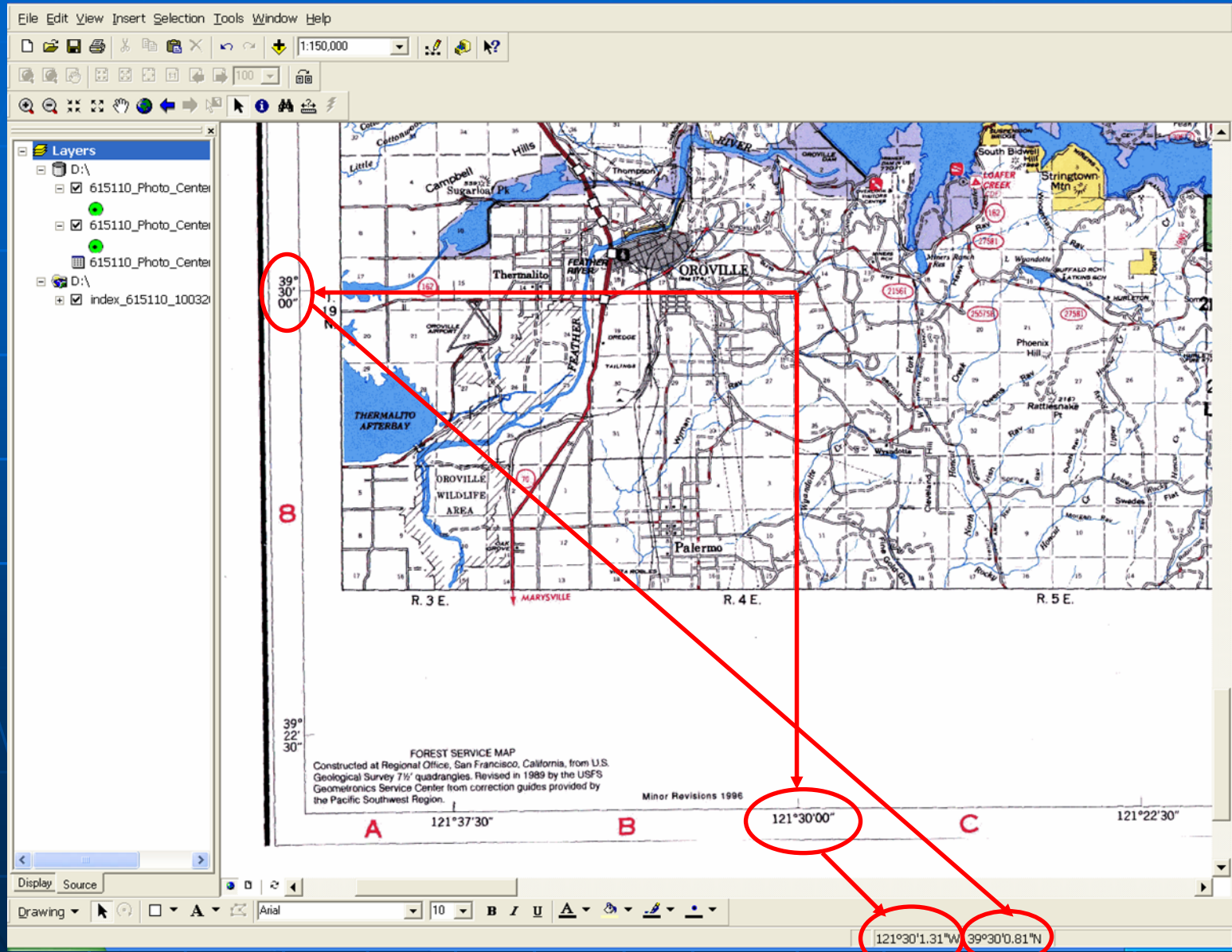


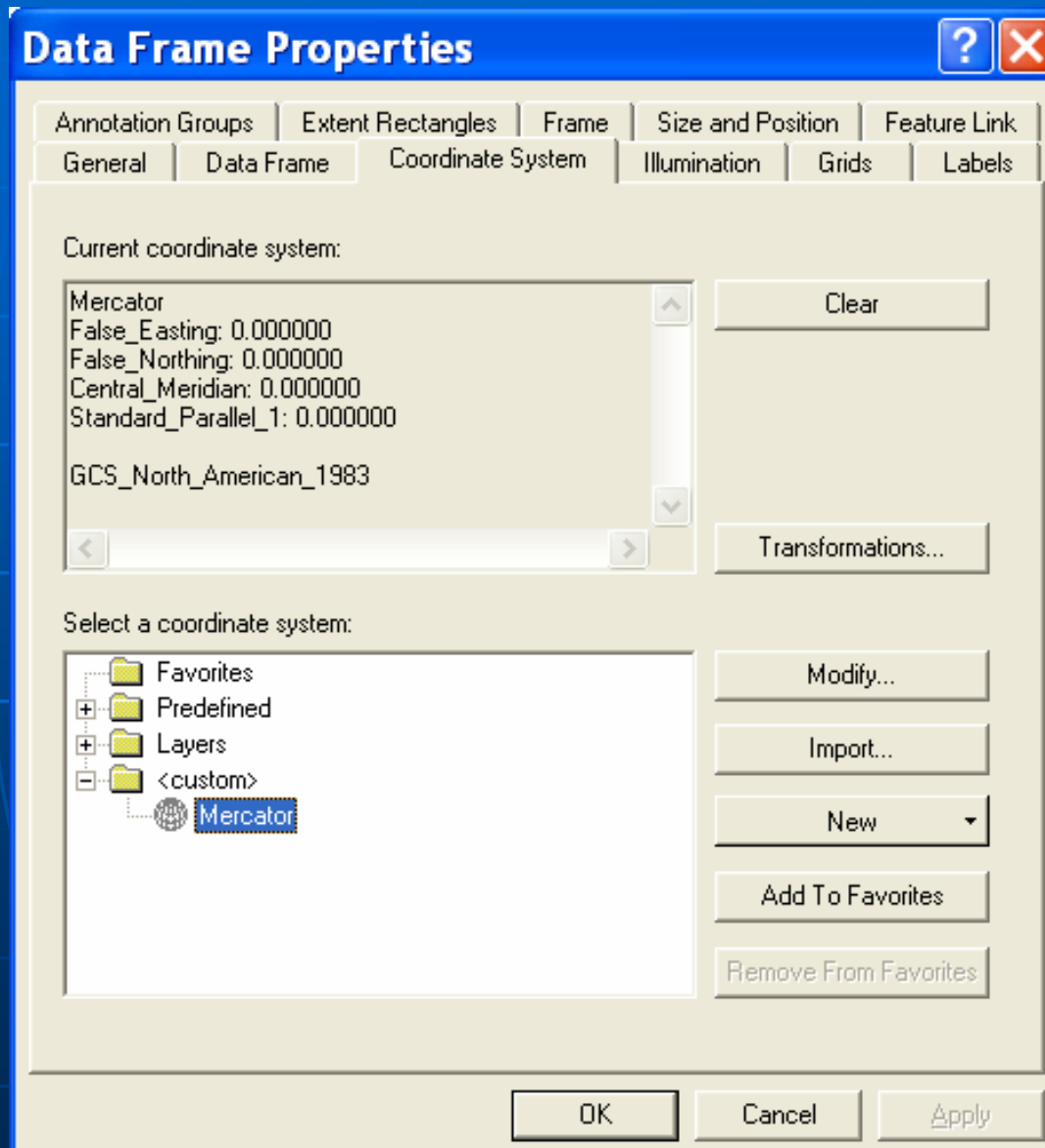
Photo Center File Overlaid



Matching Coordinates



Checking Coordinate System (Projection)



Review of Current Resource Projects

- Current Contract Status. (See Handout).
- Contractor Difficulties in Acquiring Imagery.
- APFO Inspection Workload (Schedule Board).
- Customer Feedback.
- What Does the Future Hold?

Put the "Pedal to the Metal" & Move Forward

